

# VISO SYSTEMS LabAnalyzer

## Preliminary User Manual

Revision: 23-05-2023



# Preliminary User Manual

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*Congratulations on purchasing your new Viso Systems LabAnalyzer. 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.*

*For news, Q&A and support at Viso Systems, visit our website at [www.visosystems.com](http://www.visosystems.com)*

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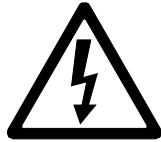
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## Safety Information

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

Read this manual before installing and operating LabAnalyzer, 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 and use of Viso LabAnalyzer.

### About the LabAnalyzer

The LabAnalyzer is a Power Analyzer (2-270 V AC/DC max 16.5Amp).

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## Contents

LabAnalyzer



2 m Power Cable (standard Schuko)



2 m Power Cable (US)



2 m Power Cable (UK)



USB Cable, 3 m



Light Source Power Cable (DUT power)



Remote Sensing Cable (grey)



Calibration Certificate

Ethernet cable for sesnor sync

Input Power Supply Cable

## Shipping dimensions and weight

Shipping Packages	Shipping Dimensions	Shipping Volume	Weight
1. LabAnalyzer + cables	400x300x150 mm	0,0324 m <sup>3</sup>	3,0 kg

Total shipping weight: 3,0 kg.

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Total shipping CBM: 0,0324 m<sup>3</sup>  
The shipment is done in a total of 1 package.

## LabAnalyzer Introduction

The LabAnalyzer is an AC / DC Power Analyzer (10A peak 800VDC peak or 280VAC). LabAnalyzer is dedicated to working with all Viso Light Measurement Systems (LightSpion, LabAnalyzer, LabSpion) and Viso Light Inspector software, but may also work as a stand-alone unit.

To comply with light measurement standards (such as IES LM-79 and CIE S 025), your devices must be tested under rated conditions with specific tolerances.

Every Viso light measurement system includes a basic built-in power analyzer. The LabAnalyzer bypasses the built-in analyzer and adds more accuracy and specific features that makes the test circuit and analyzer uncertainties comply IES LM-79 and CIE S 025 requirements.

An external integrated power analyzer provides several advantages:

- Because of the optional remote sensing option, you may secure stable feed right on the light source/driver terminals.
- The combined instrument is compact and will fit right next to your Viso gonio without the need of a rack
- LabAnalyzer just needs one communication cable to your PC with the Light Inspector software.
- Real-time readout of both on Voltage and Current curves.
- Optional remote voltage sensing for optimal accuracy.
- Sensor Synchronization for flashing lights

## Fitting LabAnalyzer into your light lab

Because of the remote sensing option, it is an advantage to keep the LabAnalyzer close to the DUT (device under test) and not in a rack. Just place the rugged LabAnalyzer case close to your goniometer.

## Remote sense function

### Requirements in standards:

Some light measurement standards require a remote sensing function applied for correct voltage measurements:

**LM 79-19: "Test Circuit Requirements.** To Avoid effects of voltage drops in cables or sockets, voltage measurements shall use separate sense leads connected at the point where the supply leads attach to the DUT (...)"

**CIE S 025/E2015: Electrical Test Conditions:** "(...) The test voltage shall be measured at the supply terminals of the DUT, not at the output terminals of power supply, to avoid errors due to voltage drop by the cables and connectors."

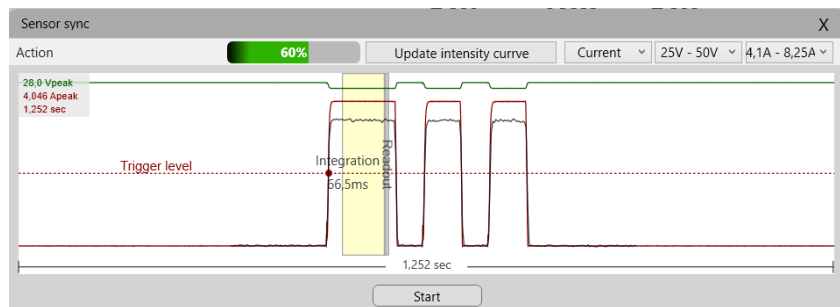
## Connecting the remote sense cable to the DUT

Use the cage clamp terminal blocks of the remote sense cable.

Tip: It is not dangerous to accidentally swap source and external voltage sense polarity though the voltage curve will be inverted on the display.

## Sensor Synchronization for flashing lights

The LabAnalyzer can synchronise power pulses with the LabSensor this makes it possible to make accurate measurement of lamp which are continuously flashing.



More information to come.....

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## Product specifications

### Physical dimensions

Dimensions (L x W x H)	270 x 220 x 105 mm
Weight	2 kg

### Power input specifications

Maximum Input voltage	AC: 270 VAC 50/60 Hz DC: 380V
Maximum input Current	14A peak and 7A RMS

### Prerequisites for power analyzer accuracy

Device Under Test Voltage	5 – 270 VAC / 5 – 380 V DC
Device Under Test Current	<14A peak and 1mA – 7A RMS
Ambient Temperature	25 ± 1.2 C

### Power Analyzer Specifications

Basic Power Accuracy (50/60 Hz)	0.5%
Analyzer Frequency Range	up to 100 kHz
Calibration uncertainty, voltmeter/ammeter	<0,2%
Calibration uncertainty, power meter	<0,5%
Voltage Accuracy	0.2% of reading + 0.2% of range
Current Accuracy	0.3% of reading + 0.3% of range
Voltage AC peak ranges (Crest factor = 3 dB)	6V / 12V / 25V / 51V / 103V / 206V / 413V / 826V
Current AC peak ranges (Crest factor = 3 dB)	3mA / 7mA / 15mA / 30mA / 60mA / 128mA / 257mA / 515mA / 1A / 2A / 4.1A / 8.2A / 16.5A
Voltage range	2-270V AC/DC
Power range AC	0.05W to 1700W @ 240VAC / 850W @ 120 VAC
Power range DC	0.05W to 1700W @ 240VDC / 850W @ 120 VDC / 170W @ 24VDC / 85W @ 12VDC Higher power values available open request (with cost of higher minimum power)
Measurement Bandwidth	200 kHz
Sample rate	2 MS/s
Output curve sample rate	125 KS/s
Measurement Parameters	Voltage, current, active power, apparent power, power factor, displacement factor.
Current sense series resistance	0.1 Ω
Voltage internal sense parallel impedance	3 MΩ
Voltage external sense parallel impedance	3 MΩ
Remote sensing function	Included (Max. test circuit resistance <0.5 Ω, Max. test circuit capacitance <1.5 nF)

### Software

Connection	USB connection to Viso Light Inspector software
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At Viso Systems we design, develop and manufacture OEM and customer-specific light measurement solutions. Our mission is to support customers with powerful, yet easy-to-use control and test solutions. Products are developed, manufactured, test and calibrated in Copenhagen, Denmark.



# Light measurement made easy

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