

VISO SYSTEMS

Guidelines

Correction for operating position

Revision: April 2023

1. Introduction

For all modern, rotating-source type goniometers, compensations must be made to adjust for influence of measuring the light source in another position than the normal burning position.

Viso Systems has a standard software feature that handles this.

Such a compensation is explicitly allowed in CIE S 025 and EN13032-4, and although not being mentioned in LM79 Viso clients in the US use this feature for compliance with LM79.

Keeping the light source in the normal burnings position during measurement used to be extremely important, since fluorescent light sources can vary 20-25% in output just based on the way they are turned. With LEDs, this problem is eliminated or at least at very low deviations, which was recently demonstrated in the impressive inter-laboratory comparison IC2017 – you may read more here (Viso is anonymized to “G46”) and here.

EN 13032-4:2014 as well as CIE S 025/E:2015 “Test Method for LED Lamps, LED Luminaire and LED Modules” state the following:

4.2.5 Operating Position

Specific requirement: The DUT shall remain in its designed operating condition throughout the stabilization and testing period.

NOTE This requirement is not applicable to LED modules whose temperature is set and maintained to performance temperature. (See 5.3.1)”

If this requirement is not met, the measurements shall be corrected to the performance in the designed operating position.

Hence, if corrected, also measurements performed in source-rotating type-c measurement systems (as Viso systems) can be said to conform with CIE S 025 and EN 13032-4.

2. Viso Light Inspector software supported correction procedure.

In the software, the correction process is supported by the step-by-step procedure described below.

This first window describes the whole process.

Lamp orientation


Test output change according to lamp orientation (CIE S 025/E:2015)

According to CIE S 025/E:2015 (Test Method for LED lamps, LED luminaires and LED Modules), the light source shall remain in its designed operating condition throughout the stabilization and testing period. If this requirement is not met, the measurements shall be corrected to the performance in the designed operating position.

Many LED lighting fixtures are intended to emit light primarily upward or downward, whereas the burning position in Viso goniometers is horizontal. Hence, Viso offers a systematic approach to make such corrections.


Step 1

Is the designed operating position up or down? If yes, make corrections



Step 2


Warm up the light source in the designed operating position for minimum 2 hours



Close

Step 3

While keeping the light source turned on, quickly (less than 20s) move it to the measuring orientation and start measuring. The intensity shift will be measured in min. 30 min. and until the changes are less than 0,5% in 15 min.



Click here to measure intensity shift

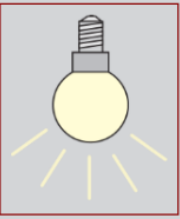
Before continuing from here, the operator must perform “step 2” (while placing the DUT close to the gonio in the position, that it would normally installed in). Mechanically, the operator must prepare the DUT to be fixed very quickly to the gonio arm, e.g. with the quick grips).

The operator clicks the lower right-hand button to continue to the following window. This window allows the operator to choose whether the DUT is normally facing down or up in the “designed operating condition”:

Lamp orientation - select orientation


Select intended installation position

Please select the intended installation orientation of the lamp
(The orientation which the lamp was in during warm up, as described in step 2).
This orientation is saved for documentation purpose.



DOWN

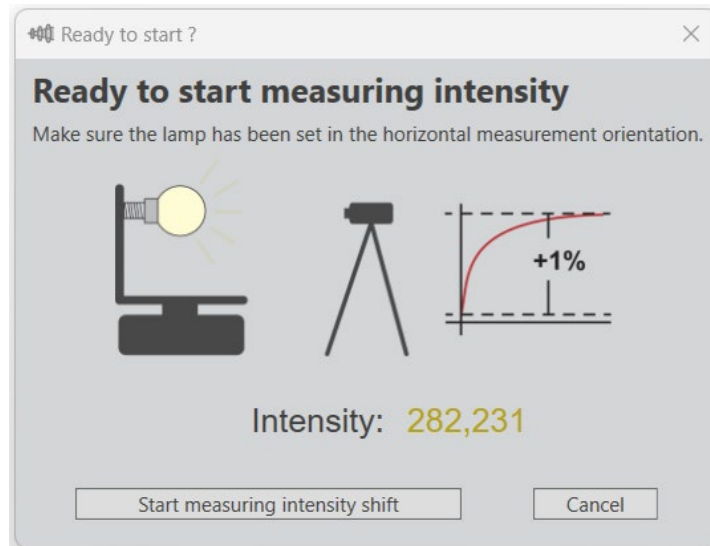
Ok



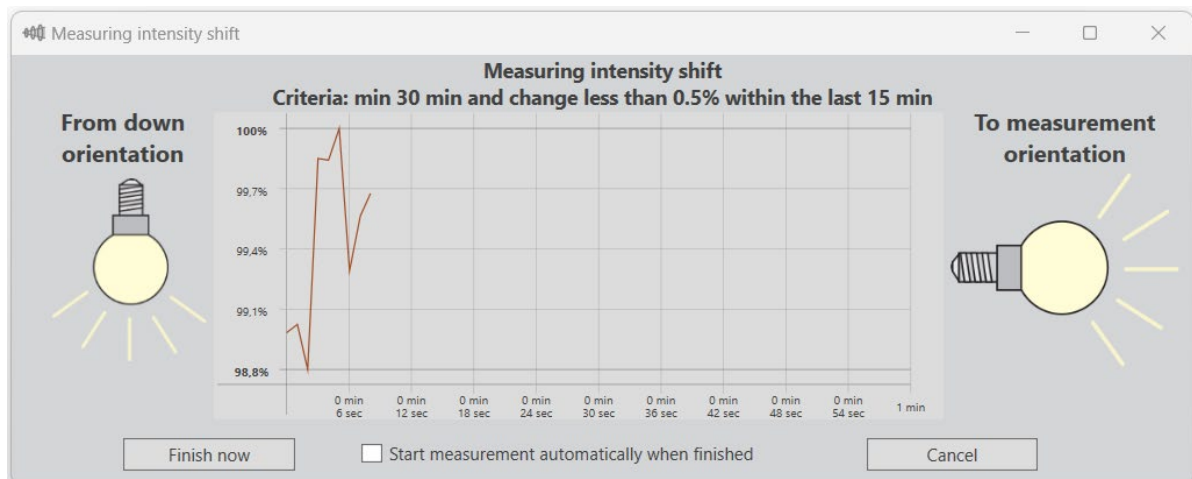
UP

Cancel

Then the operator must move the DUT fast as he can (to make sure that the internal temperature does not change). Then click “Start measuring intensity shift”:



Then, this window opens:



The operator ticks the box “Start measurement automatically” to continue with a normal measurement cycle afterwards (a window opens where you can choose the appropriate qty of measurement planes).

After either clicking the “Finish now” button or ticking the “Start measurement...” box, the operator must actively save the result with the whole light measurement.

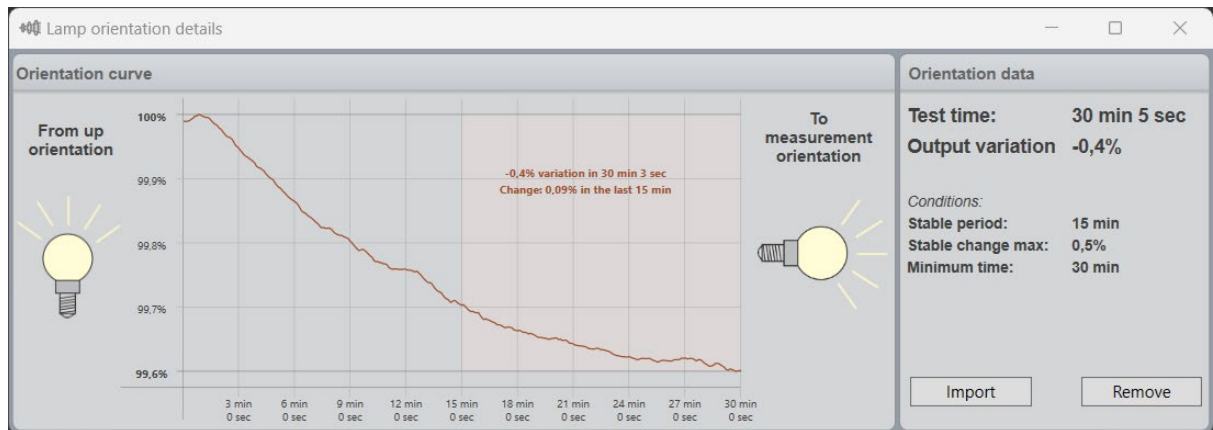
Once this comparison has been completed, the system will not automatically apply this to the measurement result as we regard it as the operator’s decision.

If a very small difference was measured, e.g. +/- 0,25% which is well within the measurement tolerance, then the operator may prefer to leave your result be.

After this procedure, you can see the result in View -> Lamp Orientation (S 025):

If a bigger difference has been detected a correction must be applied by the operator:

- Modifying the lumen package accordingly (in Edit -> Photometric -> Modify)
- Noting that a correction has been applied in the “Additional information” field.



At Viso Systems we design, develop and manufacture OEM- and customer-specific goniophotometer solutions. Our mission is to support customers with powerful and yet easy to use control measurements solutions. Products are developed and manufactured in Copenhagen, Denmark.



Light measurement made easy