thermo scientific

Lumiwell Verification Plate

USER GUIDE

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ThermoFisher SCIENTIFIC

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For descriptions of symbols on product labels or product documents, go to thermofisher.com/symbols-definition.

Revision history: MAN1001471 A (English)

Revision	Date	Description
A	28 April 2025	New manual for the Lumiwell Verification Plate.

The information in this guide is subject to change without notice.

Contents

1 Product information

Product description

Thermo Scientific™ Lumiwell Verification Plate is a standardized tool designed to assess the luminometric performance parameters of Thermo Scientific™ Varioskan™ Lux and Varioskan™ ALF microplate readers.

A Lumiwell Verification Plate shown in Figure 1 is designed with a sample well that uses a diffuse light source to stabilize an output based on a known ATP concentration.You can easily verify your microplate reader luminometric sensitivity with this verification plate and the ready-made Thermo Scientific SkanIt Software sessions and result templates.This test ensures that your luminometric instrument is working properly and providing reliable results.

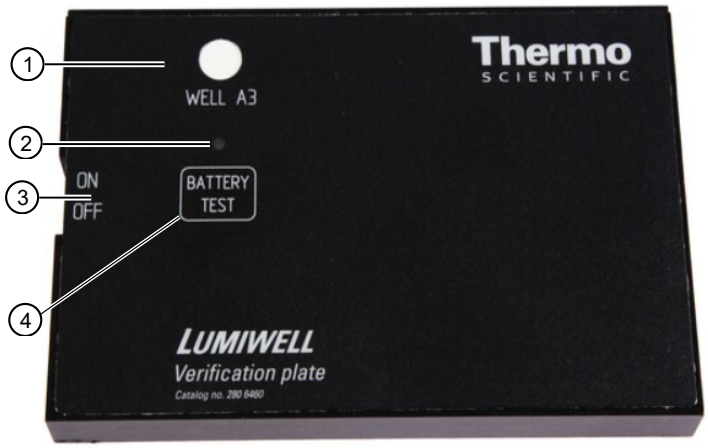


Figure 1 Lumiwell Verification Plate

1. Reference sample well
2. Battery indicator
3. Power on/off button
4. Battery test button

Thermo Scientific™ SkanIt™ Software is used to perform all measurements.Analysis of the measurement results is included in the Microsoft™ Excel™ file. A data sheet is used to do calculations, and a Results sheet in an Excel file shows the final results.You will receive the sessions and Excel files on a USB memory device.

Operational principle

The light from a green LED (light-emitting diode) is directed through an optical filter (560 nm) onto a glass window and reflected onto a white matt window for detection on the instrument. A part of the original light passes through the window and is detected by the reference detector. The signal from the detector is monitored and maintained by the control electronics.

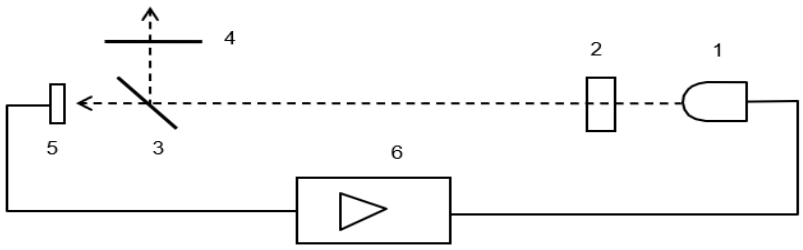


Figure 2 Operating principle of the Lumiwell Verification Plate

① Light source: LED (light-emitting diode), green
② Optical filter
③ Glass plate to split the light beam
④ Absorbance and dispersion window for the outgoing light
⑤ Reference detector: photodiode
⑥ Control electronics to keep the LED light constant

Contents

The Lumiwell Verification Plate (2806460) includes:

- Lumiwell Verification Plate
- USB memory device including:
  - SkanIt™ Software sessions and Microsoft Excel calculation files
  - User instructions
- Certificate of Calibration
- Carrying case for protecting the Lumiwell Verification Plate

2 Verify Varioskan ALF and LUX instrument performance

Run Varioskan™ ALF or Varioskan™ LUX luminometric sensitivity test

All test measurements are executed with SkanIt™ Software sessions and Excel calculation file is used to calculate the results based on the measurement raw data. The Excel file uses SkanIt™ Autoloading feature that allows result from SkanIt™ to be automatically loaded to corresponding Excel template file.

1. SkanIt™ Software sessions and Excel calculation files used in the following tests:
   a. SkanIt™ Software sessions files:
      - A40004412 Varioskan™ LUX Luminometric Sensitivity Test.skax for Varioskan™ LUX
      - A40004414 Varioskan™ ALF Luminometric Sensitivity Test.skax for Varioskan™ ALF
   b. Excel AutoLoading template:
      - A40004409 Lumiwell Verification Plate Varioskan™ LUX Test Results.xlsx
      - A40004413 Lumiwell Verification Plate Varioskan™ ALF Test Results.xlsx

   Note: The session version information is in the Notes section. Ensure your SkanIt™ Software sessions and Excel are always the latest version.
2. Save the session(s) and calculation Excel file to an appropriate folder on your PC. For example, create a new folder C:\Users\Public\Documents\Luminometric test.

   Note: Turn the instrument on and let it stabilize for at least one hour before running the tests for most accurate result.
3. Test the Lumiwell plate battery with Battery test button:
   a. Switch the plate ON
   b. Press the test button down for at least 3 seconds. Make sure that the battery indicator is showing a green light during this time.
4. Ensure that SkanIt™ is connected to the instrument and not the simulator.
   a. If the SkanIt™ Software is connected to the simulator, switch to the instrument from the dropdown list above the Start button.

   Note: For more information, refer to SkanIt™ Software User Guide.

5. Fill out the preliminary information in the Test Results Excel Summary sheet.

   Note: SkanIt™ Software version, edition, the instrument serial number and internal software version can be found in the **Instrument report** (Settings > Instruments > Edit instrument parameters > Report).

6. Run the appropriate SkanIt™ Software .skax session:

   a. Open the SkanIt™ session file or if SkanIt™ Drug Discovery Edition is in use, import the session to SkanIt™ DDE.

      Note: For more information, refer to SkanIt™ Software User Guide.

   b. Save the session with new informative name any folder (SkanIt™ RE) or into the database (SkanIt™ DDE) with “Save As” command.

   c. When the session has already been run, a green triangle will appear next to the icon.Click Start to open a new copy of the session. This copy allows you to change the instrument.

   d. Put the Lumiwell plate into the plate carrier. Click **Start** to measure the plate. Remove the plate after session run.

   e. When the luminometric test is finished (it takes about 8 minutes), the plate carrier will come out.

   f. Remove the Lumiwell plate, switch it off, and store it in its storage box.

7. Go to the SkanIt™ report section and select “to AutoLoading” function. Select Lumiwell Verification Plate Test Results.xlsx file as an autoloading target file and click Open to load the data.

8. The Excel file containing the results will open automatically for review.

9. Check the **Summary** sheet that the test has passed. Failed results are highlighted with a red color.

   a. Check the Summary sheet. If the result is “PASSED”, the instrument has been verified to give correct measurement data. Failed results are highlighted with a red color.

A Troubleshooting

Observation	Possible cause	Recommended action
FAILED result	Electronics and optics have not yet been stabilized.	Verify that the unit has warmed up sufficiently.
	Verification plate is contaminated.	Verify that top surface of the test plate and reference sample well clean from any dust or dirt.
	Verification plate has not been powered on.	Verify that Lumiwell is powered on during the measurement.
	Wrong orientation of the verification plate.	Verify that A1 corner of verification plate is on the left and back of the plate tray.
	Measurement chamber door is open.	Ensure that measurement chamber door closes when plate tray is driven in.
	One of filter loading doors is open.	Close all filter chamber doors.
	One of dispenser head positions is unplugged.	Ensure that all dispenser head positions are plugged.

Recalibration

It is recommended to recalibrate the Multifunctional Verification plate once every two years. The calibration due date is printed on the Certificate of Calibration.

B

Storage and Cleaning

Storage

Follow the storage guidelines:

- Store the Verification Plate in its own case when not in use to keep the surface clean and free of dust.
- Avoid storage locations that have a lot of dust, dirt, moisture, or high temperature fluctuations in general.

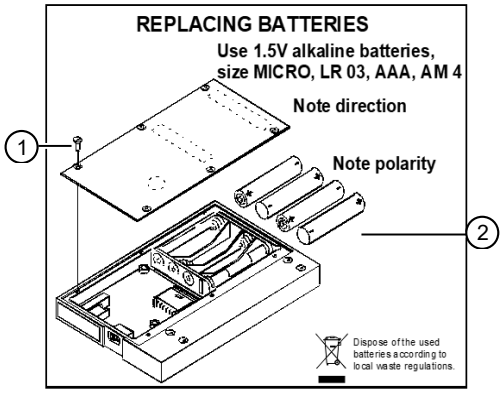
Cleaning

Follw the guidelines for cleaning:

- Use clean compressed air to remove dust particles from the reference sample well if you notice them.
- Do not use any detergents or solvents.
- Avoid removing spills and send the Verification Plate for recalibration instead.

C Install or change the batteries

CAUTION! Do not touch any of the exposed controls and buttons in the battery compartment. These components are for Thermo Fisher Scientific use only, and tampering with them could result in loss of functionality of the instrument.



① Screw holes (loosen both screws)
② Insert 4 AAA batteries here

1. On the back of the Lumiwell Verification Plate, open the battery cover by loosening the 6 screws.
2. Remove any used batteries, then insert 4 new alkaline AAA batteries (not provided).
3. Close the battery cover, then tighten the 6 screws.

Documentation and support

Customer and technical support

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- Product documentation
  - User guides, manuals, and protocols
  - Certificates of Analysis
  - Safety Data Sheets (SDSs; also known as MSDSs)

  Note: For SDSs for reagents and chemicals from other manufacturers, contact the manufacturer.

Limited product warranty

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