

Luminescence Calibration Standard

User Instructions



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Introduction

UVP's **Luminescence Calibration Standard** is used for experimental data validation as well as for the calibration of light and the validation of measuring equipment, including cameras.

The Standard emits light over four orders of magnitude and can be used for any low light-measuring camera, for quality control, or as a benchmark for between-experiment comparisons. For these purposes, the Standard emits a broad spectrum green light.

The Luminescence Calibration Standard's features include:

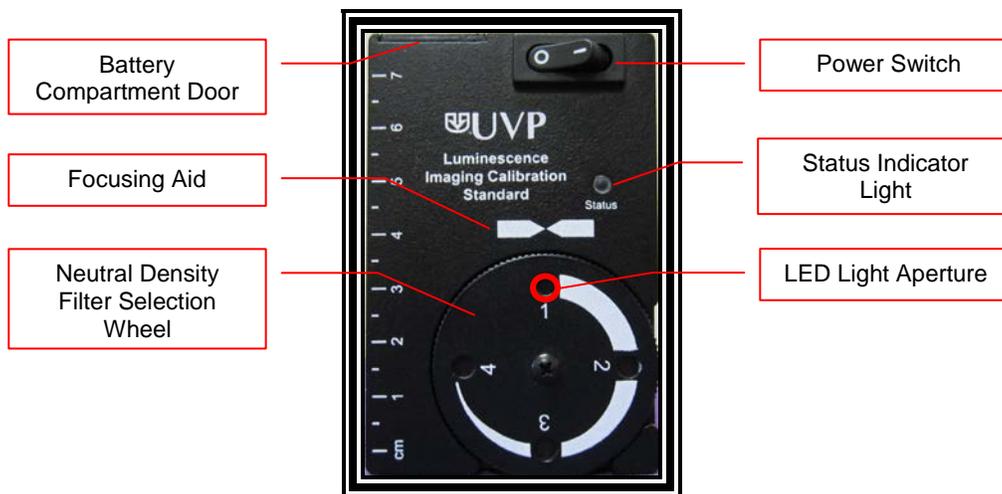
- Designed specifically for low-light calibration
- Extremely stable emission
- Broad-spectrum green light
- Descending light output of:
 - **Setting 1:** 100%
 - **Setting 2:** 10%
 - **Setting 3:** 1%
 - **Setting 4:** 0.1%
- Calibrated from the UVP factory for quantification purposes

Specifications

- Dimensions: 1.5"H x 2.125"W x 3.25"L
- Power Source: Standard 9V Alkaline Battery
- UVP Part Number: **95-0571-01**

System Components and Operation

Refer to the packing slip and the picture below for specific parts and components included with the system.



Operating the Unit

1. Turn the power switch to the ON (I) position. The Status Indicator Light will glow yellow. The LED Light in the Aperture may not be visible to the naked eye in strong ambient light or with an emission filter selected.
2. Wait approximately one minute for the Status Indicator Light to extinguish. This indicates that the LED output has stabilized and that the Standard is ready for use.
3. Rotate the Filter Selection Wheel to the appropriate position for the application. The appropriate position is the one in which the LED Aperture's output most closely matches the comparison source (such as a chemiluminescent sample) without being oversaturated. The relative light output in each position is:
 - **Setting 1:** 100%
 - **Setting 2:** 10%
 - **Setting 3:** 1%
 - **Setting 4:** 0.1%
4. Place the Luminescence Calibration Standard in the imaging device along with the comparison source.
5. Adjust the camera settings using UVP's VisionWorks[®]LS software so that the comparison source and Focusing Aid are both in focus. Then, capture the image.
6. Use the VisionWorksLS "Area Density" analysis tool to compare the relative intensities of the Standard's LED Light Aperture and comparison source.
7. Capture additional images with other comparison sources if desired.
8. Once testing is complete, turn the Standard's power switch to the OFF (O) position.

Usage Notes

1. For image intensity comparisons to be meaningful, it is important to keep as many experimental variables as constant as possible. To do so:
 - Maintain constant camera exposure times and lens aperture settings;
 - Keep the camera and imaging environment temperature as constant as possible; and
 - Place the LED aperture in the same location relative to the camera lens between trials to maintain a static light angle and path.
2. A second comparison source is not required for all experiments. For example, a comparison of lens efficiencies is possible by simply using the Luminescence Calibration Standard and switching lenses.

Service Procedures

Return Procedure

A **Returned Goods Authorization (RGA)** number must be obtained from UVP Customer Service before returning any product.

Replacing the Battery

The Luminescence Calibration Standard is powered by a standard 9V alkaline battery. To replace the battery:

1. Locate the Battery Compartment Door on the top of the unit. Remove the Door by removing the screw holding the door in place (Fig 1).
2. Pull the battery slightly out of the unit (Fig 2). Then, disconnect the Battery Terminal Connector from the battery (Fig 3).
3. Once the Battery Terminal Connector is fully disconnected, remove the 9V battery from the unit. Then, slide a new battery in with the positive (smaller) terminal facing toward the front of the unit (Fig 3).
4. Place the Battery Terminal Connector on top of the battery. Press down on the Connector until it snaps into place on both terminals (Fig 4).
5. Place the Battery Compartment Door back onto the unit, then tighten the screw to hold the door in place (Fig 1).



Fig. 1

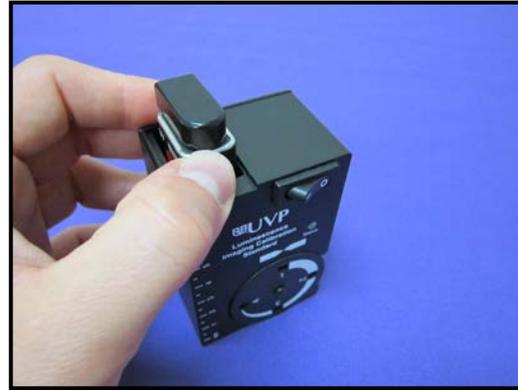


Fig. 2

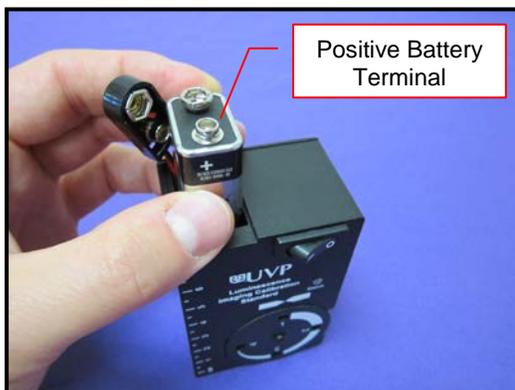


Fig. 3

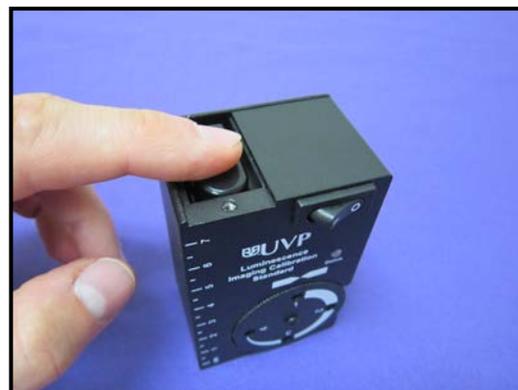


Fig. 4

Troubleshooting

The Status Indicator Light Blinks Red

Reason: Low battery. Replace the drained battery with a new 9V alkaline by opening the battery panel on the top of the unit (see “Replacing the Battery” under “Service Procedures”).

The Power Switch is On, But No Lights Are Illuminated

Reason: The battery has been drained completely and must be replaced.

The Status Indicator Light is Solid Red and Doesn't Turn Off for Several Minutes

Reason: The LED output cannot be controlled successfully and the unit must be recalibrated. Contact UVP to have the unit recalibrated.

Technical Support

UVP offers free lifetime technical support on all of its products. Should you have any questions regarding the product's use, operation or repair, contact UVP's offices at the locations below, or visit www.uvp.com.

If you are in North America, South America, East Asia or Australia:	If you are in Europe, Africa, the Middle East or Western Asia:
Call (800) 452-6788 or (909) 946-3197 , and ask for Customer Service during regular business days, between 7:00 am and 5:00 pm, PST.	Call +44(0) 1223-420022 , and ask for Customer Service during regular business days between 9:00 am and 5:30 pm.
E-mail your message to: info@uvp.com	E-mail your message to: uvp@uvp.co.uk
Fax Customer Service, and send it to (909) 946-3597	Fax Customer Service, and send it to: +44(0) 1223-420561
Write to: UVP, LLC 2066 W. 11 th Street, Upland, CA 91786 USA	Write to: Ultra-Violet Products Ltd Unit 1, Trinity Hall Farm Estate, Nuffield Road, Cambridge CB4 1TG UK

Warranty

UVP's products are guaranteed to be free of defects in materials, workmanship and manufacture for one (1) year from date of purchase. Consumable and disposable parts including, but not limited to tubes and filters, are guaranteed to be free from defects in manufacture and materials for ninety (90) days from date of purchase. Transilluminators carry a two (2) year warranty from date of purchase. If equipment failure or malfunction occurs during the warranty period, UVP shall examine the inoperative equipment and have the option of repairing or replacing any part(s) which, in the judgment of UVP, were originally defective or became so under conditions of normal usage and service.

No warranty shall apply to this instrument, or part thereof, that has been subject to accident, negligence, alteration, abuse or misuse by the end-user. Moreover, UVP makes no warranties whatsoever with respect to parts not supplied by UVP or that have been installed, used and/or serviced other than in strict compliance with instructions appearing in this manual.

In no event shall UVP be responsible to the end-user for any incidental or consequential damages, whether foreseeable or not, including but not limited to property damage, inability to use equipment, lost business, lost profits, or inconvenience arising out of or connected with the use of instruments produced by UVP. Nor is UVP liable or responsible for any personal injuries occurring as a result of the use, installation and/or servicing of equipment. This warranty does not supersede any statutory rights that may be available in certain countries.

VisionWorks is a registered trademark of UVP, LLC.